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ABSTRACT

An emphasis needs to be placed on the use and development of critical thinking skills at the elementary, secondary, and higher education levels. Critical learning that fosters active student participation, goal setting, and probing into concerns through dialogue with other students and the teacher is particularly needed to help students learn to analyze problems, deal with ethical considerations, see the broad picture, and still work within the confines of a specific task. Educators must strive to develop self-learning skills of every student, whether it be reading, speaking, writing, or listening. This paper presents a proposed model for teacher education or pattern which creatively integrates cultural/liberal arts study, specific, technical content knowledge, and professional education preparation. Teaching and learning should deal with problem solving so that relationships and issues can be analyzed to illuminate reality. With such understanding, students can enter into life with the confidence and skills necessary for them to become participative and citizens. (CB)

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POSITIVE EDUCATIONAL REFORM DEPENDS ON CRITICAL THINKING

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Amid all the discussion, controversy, legislative action and implementation of educational reform efforts in the U.S., there are deep concerns and hopes for these efforts. Many of the reforms proposed or enacted focus a renewed emphasis on traditional and/or humanities courses. The courses required for high school graduation are increasing, college entrance requirements are increasing similarly, and study groups, university professors, and state certification boards are making recommendations to "strengthen" teacher education programs. The stated goal is basic: to make our society more educated and more able to meet the challenges of the future.

Although this goal is basic, what, specifically, do we actually want from our educational system and what will these reforms deliver? At face value the reform efforts load more classes on every student. More English, math and science for high school graduation, more of the same and foreign language for college entrance and for teacher education, more technical content courses and liberal arts courses with a lengthened student teaching experience. Obviously the premise is that more is better, whether it be technical or liberal arts courses. Reformers believe that these additional course requirements will have a positive impact on all students. But, will these courses just continue to be "poured into" the students as ingredients are added to the soup kettle or will this strategy add depth and breadth, to create a meaningful foundation for the remainder of the student's life?

What truly needs to be considered is a more egalitarian and critical approach to education, whether it is the education of secondary students or university students. An emphasis needs to be placed on the quality of the process instead of the mechanical, rote, large group educational techniques which prevail on all levels. Increasing the amount of rote memory and mechanical activities does little if anything for the development of an educated person. Instead, educators, especially teacher educators because of the geometric results of their work, need to focus on infusing critical learning. Critical learning is that type of learning where the student is participating actively, setting goals, accepting responsibility, questioning current standards, and probing into concerns through a dialogue with other students and the instructor. Our society depends on citizens who can analyze problems, deal with ethical considerations, see a broad picture and still work within the confines of a given task. Educators should strive to develop self learning skills of every student, whether it be reading, speaking, writing, or listening. Teaching and learning should deal with problem solving so that relationships and issues can be analyzed to illuminate reality. With such understanding students then can enter into life with the confidence and skills to be participative and constructive citizens.

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POSITIVE EDUCATIONAL REFORM DEPENDS ON CRITICAL THINKING

Educational Environment

Over the past five years commissions, researchers, and theorists (Boyer, 1983; The Carnegie Task Force on Teaching as a Profession, 1986; Davidson and Martin, 1980; Education Commission of the States, 1983; Goodlad, 1984; Gross and Gross, 1985; The Holmes Group, 1986; Illinois State Board of Education, 1987; Mahlman, 1985; National Association for Business Teacher Education, 1982; National Commission for Excellence in Teacher Education, 1985; National Commission on Secondary Vocational Education, 1984; National Commission for Excellence in Teacher Education, 1985; National Council for Accreditation of Teacher Education, 1986; Shor, 1986; Shanker, 1986; Stipp, 1986; Tucker and Mandel, 1986; Wiggins, 1986) have analyzed, concluded, and recommended numerous changes in the manner in which education is to be delivered in the United States. Many of the recommendations have already been acted upon by state legislatures across the country. This paper will discuss reform efforts, current theory and research related to the content and process of education, and the reform of teacher education through a synthesis of this related data.

Reform Efforts

Many of the reforms proposed or enacted focus a renewed emphasis on liberal arts, humanities courses. The courses required for high school graduation are increasing, college entrance requirements are increasing similarly, and study groups, university professors, and state certification boards are making recommendations to "strengthen" teacher education programs.

At face value the reform efforts load more classes on every

student. More English, math and science for high school graduation, more of the same and foreign language for college entrance and for teacher education, more liberal arts courses and technical content courses with a lengthened student teaching experience. Obviously the premise is that more is better, whether it be liberal arts or technical courses. Reformers believe that these additional course requirements will have a positive impact on all students, but what, specifically, do we and the reformers actually want from our educational system and what will these reforms deliver?

It is presumed that through these changes students will be more literate, having better writing and reading skills. They will have a better understanding of history and science, as well as more sophisticated mathematics skills. They will have also developed a basic computer literacy with the possibility of using applications software. Reformers feel that because of increased foundational knowledge and improved skills, students will be more able to handle a fast paced, constantly changing future, and that students will be able to transfer their background and skills to new situations effectively. Hopefully, students will be better able to make decisions in a critical, reasoned manner.

Curriculum

It appears that there are differing perspectives on what should be included in curriculum presented at any level of instruction. Two recent publications by Hirsch (1987) and Bloom (1987) have presented their perspectives on strengthening our nation's educational system. Hirsch suggests that a much higher level of cultural literacy (a body of information, concepts, dates, places and people which should be common among all citizens)

is needed if our country is to be able to maintain a leadership role in world affairs. Hirsch (1987) states,

> ...being taught to decode elementary reading materials, and specific, job-related texts cannot constitute true literacy. To be truly literate, citizens must be able to grasp the meaning of any piece of writing addressed to the general reader. All citizens should be able, for instance, to read newspapers of substance. p. 11-12

Bloom's (1987) thesis is that today's universities don't offer students any instruction which enlivens the spirit or provides a solid foundation for decision making. He states that:

> It is becoming all too evident that liberal education--which is what a small band of presitigous institutions are supposed to provide, in contrast to the big state schools, which are are thought simply to prepare specialists to meet the practical demands of a complex society--has no content, that a certain kind of fraud is being perpetrated. p.13

These authors' concerns are basically supported by the recent research completed by the National Endowment for the Humanities (Startling, 1987, p. 1) which indicated "that American schools are producing students with startling gaps in knowledge of history and literature, teaching them how to think without giving them anything to think about."

As with most issues, there are at least two perspectives which demand attention and review, i.e. the basics movement, as mentioned above, and the critical thinking movement. The Education Commission of the States (1983) suggests that we need to go beyond basics and prepare individuals for a future which will be much different than what we experience today. Citizens of the future will need higher quality change skills (Karmos, Karmos, Presley, and Daniels, 1986), those skills which will allow them to learn and adapt to new and different situations, to critically analyze the environment and solve problems. Brown (1984) believes

that the future of the nation depends on the degree to which individuals are able think and solve problems. With this notion, the teaching of critical thinking skills should be a major objective of education. He points out that schools should not just focus on the basic skills, but also include higher order cognitive skills. Another complaint (Bastian, Fruchter, Gittell, Greer, and Haskins, 1986; Raths, Wasserman, Jonas, and Rothstein, 1986) concerning the "basics" emphasis is that in this approach tests of proficiency would be administered periodically to examine students' abilities and teachers' performance. Such an approach, they feel, would reinforce performance at a minimally acceptable level and cause this level of accomplishment to become the ceiling of achievement.

Amidst this dichotomy, there are several writers who think that a mixture of both basics and critical thinking in the curriculum is essential to the development of an educated populous. Schulman (1987), Raspberry (1987), and Strong, Silver and Hanson (1985) all suggest that there should be a integration of literacy and critical thinking instruction if we are to see individuals making positive adjustments in an ever changing world. Even Hirsch (1987), who attacks experienced based, problem solving instruction because of its lack of content and untransferability, supports the notion that the curriculum should be traditional in content, but diverse and pluralistic in its methods and modes of delivery.

It is obvious that there is value in both positions and that these should be considered in any reform effort at any instructional level. How to integrate these two concepts is a truly creative and critical opportunity. Creative in the sense that new approaches need to be examined and utilized. Critical, by way of an analysis

of what exists and what is effective.

Critical Thinking and Teacher Education

Besides the nature of school curriculum, the educational reform literature addresses almost every conceivable issue, including size of districts, teacher salaries, school administration activities and skills, and teacher education programs. Currently, teacher education is a major topic of discussion in the professional and the popular literature (Chicago Tribune, 1985; Wiggins, 1986). This emphasis appears to be a positive avenue to having a direct impact on instruction since the quality of teacher education leads to classroom teacher/student performance. Because teachers' abilities are so crucial, many educational theorists and researchers are suggesting the reformation of the traditional teacher education program. The Carnegie Task Force (1986) and the Holmes Group (1986) are the most prominent of these. These two reports suggest that teacher education programs focus more on content knowledge and liberal arts, with less emphasis on professional education courses. These reports suggest fine tuning the professional education portion of the program so that weak and redundant courses or topics are eliminated. In addition, these two reports suggest that teacher education be a graduate program, during which time students study teacher education foundations in a seminar setting while also completing student teaching in a clinical setting. Because of the impact teachers have on any reform effort, this paper focuses on the preparation of teachers.

Currently, the reform efforts related to teacher education center on amounts and types of courses and time spent in a teacher education program. In analyzing these suggested reforms, it is apparent that there is an assumption that more is better.

Obviously, content knowledge in one's major field of study should have a direct impact on understanding content which should be taught by the future teacher, and the liberal arts portion should provide a strong foundation for learning how to learn and for acquiring basic knowledge. The professional education program should provide insight and experience into the nature of instruction. This program should prepare a prospective teacher for entry into the profession. But what do teacher education students really need from the higher education curriculum? Do university faculty truly develop minds or are they in the business of filling craniums with facts and concepts? Can university faculty, in general, be considered exemplary in their methods of instruction such that teacher education students could model their styles and methods? Do the reform efforts provide answers to these questions?

Model Building

The activities in any elementary or secondary classroom are dynamic in the sense that each day holds new problems and promises. Following pre-developed lessons day by day in a lock-step pattern is an impossibility. By putting more emphasis on accountability for what is taught, reformers are taking control and opportunity out of the hands of teachers, not to mention a degree of professionalism. As Glickman (1987) indicates, teaching is a world of uncertainty; to be successful, teachers need to be prepared for a teaching environment which will demand that they be able to critically analyze their knowledge and environment. He states that if teachers allow someone else to control what will happen in a classroom, then teachers lose the capacity to be creative, learn, and make adjustments for the benefit of the students. To deal with such a professional role teachers need to

be able to critically study content, student background, teaching environment, instructional methodology, and strategy in determining what will take place in the classroom. According to Ayers (1986), teachers need to be empowered, to be able to judge when to be the stimulus, reactor, director, or responder in an educational setting.

The nature of teaching is such that teachers need to be prepared for problems and opportunities in the classroom, not just be dispensers of facts and concepts. Shor (1986) is critical of the proposed reforms suggested for teacher education because these reforms focus on quantity of liberal arts, technical studies, and professional education courses required and assume that what takes place in these courses is meaningful and worthwhile for the prospective teacher. Process should be a larger consideration. In the higher education environment, the most prolific teacher education programs are in large (10,000 plus students) state universities. The nature of many classes, including liberal arts and specific technical content courses, is that a professor, graduate assistant, or temporary part time faculty member will lecture to a group of students which could be as large as 75 to 400 students. It is difficult to believe that one-way lectures epitomize involvement in learning. This situation is counter to what is known about making education worthwhile. According to National Institute Of Education's Involvement in Learning report (1984), the most important condition for improving undergraduate education is the level of student involvement. Student involvement entails the amount of time and effort which students devote to the learning process. This requires instructors to interact with students to assist them in making decisions and following through on assignments. Although it is assumed liberal arts and technical

content courses are filled with activities which challenge the students to consider problem solving situations in a thoughtful manner, as well as practice and refine skills, this does not take place, to any significant degree, especially during class time. This is associated with this minimal level of student/instructor interaction. One method of adding interaction and involvement is through the socratic method of questioning students. According to The Teaching Professor (1987), less than 4% of class time is spent on pondering instructor initiated questions and there is no difference between levels of instruction. It is even more unfortunate to consider that a majority of these questions are just basic recall questions. Even in upper division courses the situation is no different. In totality, these courses offer very little for the prospective teacher other than disconnected, background facts and concepts, assignments which provide only indirect communication with the instructor, and a reinforced model of stale, unchallenging instruction. If these types of classes are not going to help a student become a thinker or provide an excellent model of instruction, why are more liberal arts and technical content classes being called for?

Another problem which reform in teacher education does not confront is transferability. It is known that knowledge and specific skills developed in liberal arts and specific technical content classes are generally not transferred to other areas of study unless students are taught how to use these in a new situation. Certain basic, general knowledge does assist in other novel situations (Krauss and Glucksberg, 1977), but skills are not transferred (Larkin, 1977; Matro, 1987). The reform efforts which call for teacher education students to pick up skills and

knowledge by completing more liberal arts and specific, technical content courses ring hollow.

What truly needs to be considered is a more critical approach to education, whether it is the education of secondary students or university students. An emphasis needs to be placed on the quality of the process instead of the mechanical, rote, large group educational techniques which prevail on all levels. Increasing the amount of rote memory and mechanical activities does little if anything for the development of an educated person. Instead, educators, especially teacher educators because of the geometric results of their work, need to focus on infusing critical learning. Critical learning is that type of learning where the student is participating actively, setting goals, accepting responsibility, questioning current standards, and probing into concerns through a dialogue with other students and the instructor.

From this information the following teacher education principles are deduced:

1. Teacher education students need to develop an acceptable level of cultural literacy so that they have a formidable, general foundation of information which will help them teach and learn. This foundation should be developed in courses which are taught by professors which offer excellent models of instruction in, as often as possible, a small group setting. Critical analysis of history, philosophy, literature, social sciences, and physical and biological sciences should provide a core for these programs.

2. Teacher education students need to develop an adequate technical background (the language, concepts, theories, leaders in the field, skills, and history) of a field of study so they

can effectively instruct students. Students should develop a knowledge and skill base which would be acceptable for entry into a career in the field. Again, exemplary instructors in small group settings are most appropriate.

3. Teacher education students need to develop a professional background (the language, concepts, theories, research, leaders in the field, skills, and history) of the field of education study so they can develop a professional education attitude and effectively interact with professionals in the field of education.

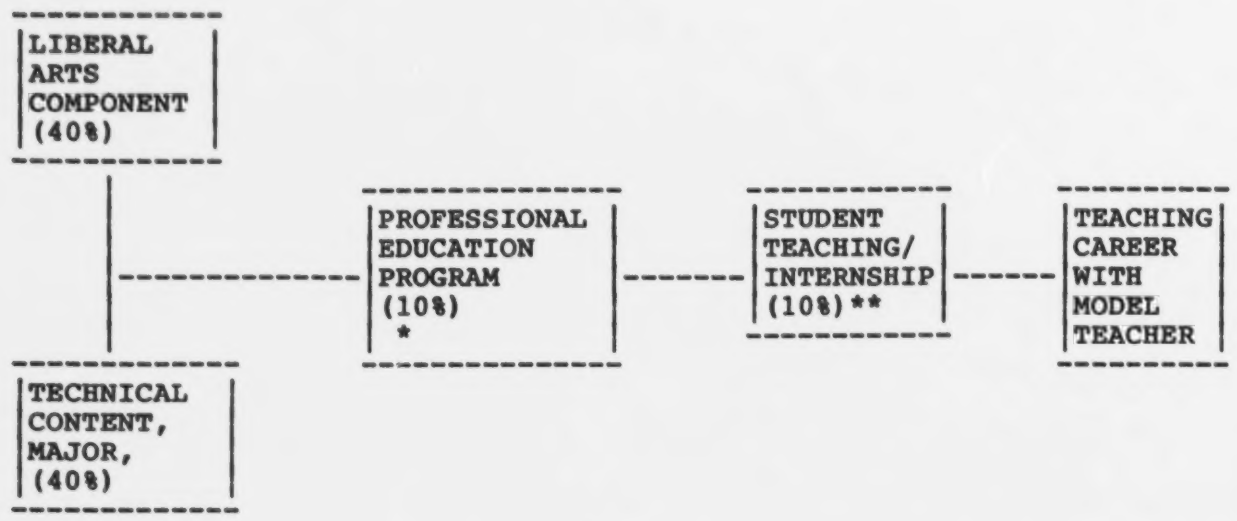
4. Teacher education students need to develop the ability to transfer and adapt content information and skills from their background into meaningful instruction. This entails the exercise of critical thinking skills which need to be developed in a context which is related to instructional problems. As cited earlier, there is a lack of transfer from content and liberal arts courses to other situations. Because of this, it is crucial for teacher educators to teach content as well as methods, materials, and strategies.

5. Teacher education students need to develop their ability to teach via differing methods, media, and strategies. These teaching activities should be as reality-based as possible with critical analysis of videotaped practice teaching sessions.

From these principles, the following model is presented. The model is a pattern which creatively integrates cultural/liberal arts study, specific, technical content knowledge, and professional education preparation. This model will have a positive impact on teacher education students if the the listed principles are followed and that the professional education program includes the content listed after the model diagram. The purpose of proposing

this model is to provide a conceptual framework from which prospective teachers can acquire foundational knowledge, specific content information, and then be able to creatively process this background into meaningful, purposeful lessons for their future students.

A PROPOSED MODEL FOR TEACHER EDUCATION


LIBERAL ARTS COMPONENT (40%)
PROFESSIONAL EDUCATION PROGRAM (10%) *
STUDENT TEACHING/ INTERNSHIP (10%)**
TEACHING CAREER WITH MODEL TEACHER
TECHNICAL CONTENT, MAJOR, (40%)

(% indicates the percent of an undergraduate education program which should be utilized in a specific area)

*** Professional Teacher Education Program**

The debate over structure and content of teacher education programs has had an emphasis on reshaping existing efforts. The previously cited reform literature suggests that the following categories of content should be included in the professional education portion of teacher education programs.

Teaching Strategies

Selecting content to be taught.
Planning curriculum.
Selecting, developing and evaluating teaching strategies.
Recognizing student errors and difficulties.
Using research and experienced-based information about teaching.

Teaching Methods and Materials

Observing and analyzing student performance.
Integrating technology with instruction.
Developing higher-order thinking and problem solving.
Integrating appropriate advanced content into courses.
Understanding human/social concerns in the classroom.
Utilizing community resources.
Teaching techniques for reading, writing, and listening.
Utilizing various media.
Teaching and analyzing practice lessons.
Reteaching lessons.
Managing the classroom.

Educational Foundations

Schooling in America.
Professional considerations in education.
Educational philosophy and sociology.
Thinking and learning theory for differing levels of development.

** Student Teaching/Internship

This portion of the program should focus on the student teacher as an apprentice working with a master teacher for as long a period of time as possible. During this experience the student teacher should have the opportunity to try various methods of instruction using appropriate media and resources. The master teacher should provide guidance in the development of lessons and analysis of these after completion. The master teacher should assist the student teacher in developing critical analysis skills so that when the student teacher starts a teaching career he or she will be creative and analytical in developing and reviewing the outcomes of teaching. If possible, a regular seminar with other student teachers to discuss mutual problems, opportunities, and rewards would be beneficial in that these prospective teachers would develop a collegial attitude toward other teachers. Hopefully, this would lead to more collaborative efforts among teachers.

Summary

The improvement of society depends on citizens who, from their foundational knowledge and skills, can analyze problems, deal with ethical dilemmas, consider broad issues, and still work within the confines of a specific task. To this end, society depends, to large degree, on teachers to develop youth to their fullest potential for life's challenges. With this in mind, teachers need to be the best educated, with the strongest knowledge and skills. If prospective teachers are taught by the best to use critical learning skills, then society can strive for new levels of truly educated citizens. Teachers need to prepare every student with a foundation of knowledge and skills and with the ability to use these in solving problems so that issues and relationships can be analyzed to improve the quality of life.

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